

(7) The lugging mode specified in § 86.884-7(a)(3)(ii) starts when the preceding transition period has been completed and ends when the engine speed is at the intermediate speed.

(b) Determine if the test requirements of § 86.884-7 are met by applying the following modal criteria:

(1) Idle mode as specified in § 86.884-7(a)(1):

(i) Duration: 5 to 5.5 minutes.

(ii) Speed: within specification during the last four minutes of the mode.

(2) Acceleration mode as specified in § 86.884-7(a)(2)(i).

(i) Duration: three seconds or less.

(ii) Speed increase: 200 ± 50 rpm.

(3) Acceleration mode as specified in § 86.884-7(a)(2)(ii);

(i) Linearity: ± 100 rpm as specified in paragraph (c) of this section.

(ii) Duration: 3.5 to 6.5 seconds.

(iii) Throttle position: fully open until speed is at least 85 percent of the rated speed.

(4) Transition period as specified in § 86.884-7(a)(2)(iii):

(i) Throttle position: moved rapidly to, and held in, the fully closed position.

(5) Acceleration mode as specified in § 86.884-7(a)(2)(iv):

(i) Duration: 8 to 12 seconds.

(ii) Throttle position: fully open when speed is at intermediate speed.

(6) Transition period as specified in § 86.884-7(a)(3)(i):

(i) Duration: 50 to 60 seconds.

(ii) Average speed during the last 10 seconds shall be within ± 50 rpm of rated speed.

(iii) Average observed power during the last 10 seconds shall be at least 95 percent of the horsepower developed during the preconditioning mode.

(7) Lugging mode as specified in § 86.884-7(a)(3)(ii):

(i) Linearity: ± 100 rpm as specified in paragraph (c) of this section.

(ii) Duration: 30 to 40 seconds.

(iii) Speed at end: intermediate speed.

(c) Determine if the linearity requirements of § 86.884-7 were met by means of the following procedure:

(1) For the acceleration mode specified in § 86.884-7(a)(2)(ii), note the maximum deflection of the rpm trace from a straight line drawn between the

starting and ending points specified in paragraph (a)(3) of this section.

(2) For the lugging mode specified in § 86.884-7(a)(3)(ii), note the maximum deflection of the rpm trace from a straight line drawn from the starting and ending points specified in paragraph (a)(7) of this section.

(3) The test results will be invalid if any deflection is greater than 100 rpm.

(4) This linearity check may be performed by direct analysis of the recorder traces, or by computer analysis of data collected by automatic data collection equipment.

(d) Analyze the smoke trace by means of the following procedure:

(1) Starting at the beginning of the first acceleration, as defined in paragraph (a)(2) of this section, and stopping at the end of the second acceleration, as defined in paragraph (a)(3) of this section, divide the smoke trace into half-second intervals. Similarly, subdivide into half-second intervals the third acceleration mode and the lugging mode as defined by paragraphs (a)(5) and (7) respectively, of this section.

(2) Determine the average smoke reading during each half-second interval.

(3) Locate and record the 15 highest half-second readings during the acceleration mode of each dynamometer cycle.

(4) Locate and record the five highest half-second readings during the lugging mode of each dynamometer cycle.

(5) Examine the average half-second values which were determined in paragraphs (d)(3) and (d)(4) of this section and record the three highest values for each dynamometer cycle.

(6) This smoke trace analysis may be performed by direct analysis of the recorder traces, or by computer analysis of data collected by automatic data collection equipment.

[48 FR 52203, Nov. 16, 1983, as amended at 49 FR 48141, Dec. 10, 1984; 62 FR 47123, Sept. 5, 1997]

§ 86.884-14 Calculations.

(a) If the measured half-second opacity values were obtained with a smokemeter with an optical path length different than shown in the table in § 86.884-8(c), then convert the measured half-second values or the

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original instantaneous values to the appropriate equivalent optical path length values specified in the table. Convert the opacity values according to the following equations:

$$N_s = 100 \times (1 - (1 - N_m/100)^{L_s/L_m})$$

L_m and L_s must use consistent units in the above equation

Where:

N_m =Measured half-second value for conversion, percent opacity

L_m =Measuring smokemeter optical path length, meters

L_s =Standard optical path length corresponding with engine power, n

N_s =Standard half-second value, percent opacity

(b) Average the 45 readings in § 86.884-13(d)(3) or the equivalent converted values from paragraph (a) of this section if appropriate, and designate the value as "A". This is the value for the engine acceleration mode.

(c) Average the 15 readings in § 86.884-13(d)(4) or the equivalent converted values from paragraph (a) of this section if appropriate, and designate the value as "B". This is the value for the engine lugging mode.

(d) Average the 9 readings in § 86.884-13(d)(5) or the equivalent converted values from paragraph (a) of this section if appropriate, and designate the value as "C". This is the value for the peaks in either mode.

(e)(1) If multiple smokemeters were used, the half-second values for each mode from each smokemeter shall be combined and the calculated average based upon the total number of combined values.

(2) For example, if two smokemeters were used for acceleration mode data, 45 half-second values in each data set from both smokemeters would be combined to form a data set of 90 values, which would then be averaged.

[62 FR 47123, Sept. 5, 1997]

Subpart J—Fees for the Motor Vehicle and Engine Compliance Program

SOURCE: 57 FR 30055, July 7, 1992, unless otherwise noted.

§ 86.901-93 Abbreviations.

The abbreviations in this section apply to this subpart and have the following meanings:

CAFE—Corporate Average Fuel Economy,

Cal—California,

CPI—Consumer Price Index,

ESI—Engine System Information,

EPA—U.S. Environmental Protection Agency,

Fed—Federal,

HDE—Heavy-duty engine,

HDV—Heavy-duty vehicle,

ICI—Independent Commercial Importer,

LDV—Light-duty vehicle,

LDT—Light-duty truck,

MC—Motorcycle,

MVEPC—Motor Vehicle and Engine Compliance Program,

MY—Model Year,

OEM—Original equipment manufacturer,

SEA—Selective Enforcement Auditing.

§ 86.902-01 Definitions.

(a) The definitions in § 86.902-93 continue to apply to this subpart.

(b) The definitions in subparts A and S of this part apply to this subpart.

[64 FR 23922, May 4, 1999]

§ 86.902-93 Definitions.

California-only certificate is a Certificate of Conformity issued by EPA which only signifies compliance with the emission standards established by California.

Certification request means a manufacturer's request for certification evidence by the submission of an application for certification, ESI data sheet, or ICI Carryover data sheet.

Engine-system combination as defined in 40 CFR 86.082-2, means an engine family-exhaust emission control system combination.

Federal certificate is a Certificate of Conformity issued by EPA which signifies compliance with emission standards in 40 CFR part 86, subpart A.

Fuel economy basic engine means a unique combination of manufacturer, engine displacement, number of cylinders, fuel system, catalyst usage, and other characteristics specified by the Administrator.

Filing form means the MVECP Fee Filing Form to be sent with payment of the MVECP fee.